



## **MAXI J1621-501 distance inferred from type-I X-ray bursts detected by JEM-X**

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## MAXI J1621-501 distance inferred from type-I X-ray bursts detected by JEM-X

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 on 7 Feb 2018; 17:29 UT

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Subjects: X-ray, Neutron Star, Transient

Referred to by ATel #: [11317](#)

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During INTEGRAL observation of the Norma Region (revolution 1915) on February 3<sup>rd</sup>, 2018, a thermonuclear X-ray burst was detected by the JEM-X instruments at 21:51:08 UTC with a rise time of about 2s and a decay time of almost 40s as measured between 3-25 keV. The position of the burst (RA=245.09, Dec=-50.03; 2 arcmin error radius) on the JEM-X image is consistent with MAXI J1621-501 (ATel #[10869](#), #[10874](#)), which has already been recorded as an X-ray burster (ATel #[11067](#)).

Considering that INTEGRAL cannot distinguish MAXI J1621-501 from AX J1620.1-5002 only separated by about 2 arcminutes, this suggests that the source which is currently seen active by INTEGRAL (ATel #[11252](#)) is MAXI J1621-501.

The source flux is measured with the following higher values compared to the previous INTEGRAL revolution (ATel #[11252](#)):

3-10 keV:  $24 \pm 1$  mCrab,  
 10-25 keV:  $23 \pm 5$  mCrab,  
 22-60 keV:  $22.5 \pm 1.3$  mCrab

The JEM-X light curves show a structure consistent with a photospheric radius expansion burst reaching the Eddington luminosity. The burst peak flux is measured at  $1.5 \pm 0.3$  Crab between 3-25 keV corresponding to an estimated unabsorbed bolometric flux of  $(4.1 \pm 1) \times 10^{-8}$  erg/cm<sup>2</sup>/s. We thus derive a source distance of  $8.4 \pm 2$  kpc using the standard candle burst luminosity ( $L_{\text{Edd}} = 3.8 \times 10^{38}$  erg/s) from Kuulkers et al. 2003; A&A 399, 663.

A similar X-ray burst is again detected from the same position during INTEGRAL revolution 1916 at 2018-02-06T03:42:05. At that time the average source fluxes are measured at  $30 \pm 2$  mCrab between 3-25 keV and  $40.3 \pm 1.5$  mCrab between 22-60 keV.

### Related

- [11317](#) Identification of AX J1620.1-5002 with MAXI J1621-501
- [11272](#) MAXI J1621-501 distance inferred from type-I X-ray bursts detected by JEM-X
- [11252](#) INTEGRAL detection of X-ray transient source AX J1620.1-5002
- [11067](#) Detection of Type-I X-ray bursts from MAXI J1621-501
- [10969](#) Brightening of MAXI J1621-501 as seen with Swift/XRT
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